FINAL DRAFT – FOR PUBLIC COMMENT

The Fall Creek Total Maximum Daily Load (TMDL) Of the Lake Walcott Watershed Management Plan (Lake Walcott TMDL)

By

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July 26, 2006

INFORMATION AT A GLANCE	
303(d) Waterbody	Snake River
Non 303(d) Waterbody	Fall Creek
Pollutants of Concern	Sediment, nutrients, bacteria
NPDES Permitted Facilities	ID-0026719 - Upper Facility ID-0026816 - Lower Facility
Approved TMDL	Lake Walcott TMDL

I. INTENT AND PURPOSE

The intent and purpose of the Fall Creek Total Maximum Daily Load (or Fall Creek TMDL) is to establish water quality load allocations for sediment, nutrients and bacteria in Fall Creek as part of the overall Lake Walcott TMDL. Fall Creek is not a §303(d) listed waterbody (Lay 2000 [p 99]); but is described in the Lake Walcott Total Maximum Daily Load (i.e. Lake Walcott TMDL) as a "perennial stream feeding the Snake River in the Walcott Subbasin" (Lay 2000 [p32]). The receiving waterbody to Fall Creek is the Snake River, which is §303(d) listed. Consequently, the Fall Creek TMDL is necessary to protect the beneficial uses of the Snake River as part of the Lake Walcott TMDL. The Fall Creek TMDL, therefore, is a tool for implementing State water quality standards and is based on the relationship between pollution sources and instream water quality conditions. The Fall Creek TMDL establishes the allowable loadings or other quantifiable parameters for Fall Creek and thereby provides the basis for the State to establish water quality-based controls. These controls should provide the pollution reduction necessary from Fall Creek to downstream water quality standards and beneficial uses of the Snake River. The Fall Creek TMDL may require more stringent reductions through implementation of other best management practices or limitations if water quality standards and beneficial uses are not achieved.

II. IDENTIFICATION OF WATERBODY, POLLUTANTS OF CONCERN, POLLUTANT SOURCES, AND PRIORITY RANKING

Fall Creek is identified by Lay (2000) as a tributary to the Snake River. Its confluence is at approximately River Mile 697.3 (Lay 2000 [p 172]). See Appendix A. As defined in the Lake Walcott TMDL, Fall Creek discharges in Segment 2 of the Lake Walcott Snake River Reach (Lay 2000 [p 144]). Segment 2 is defined according to the mass balance model that was used in the TMDL to establish the loading analysis (Lay 2000 [pp 143-144]). Fall Creek is also designated as US-7 under IDAPA §58.01.02.150.11 with undesignated beneficial uses.

The pollutants of concern are based on the water quality impairments to the Snake River since the Snake River is the receiving waterbody. Fall Creek is located in the Massacre Rocks to Lake Walcott Reach of the Snake River; which is a 22-mile low-gradient section at a relative slope of 0.23 feet per mile (Lay 2000 [pp 48-49]). The primary pollutants-of-concern include sediment, nutrients and bacteria.

The priority ranking for the Snake River (i.e. Massacre Rocks to Lake Walcott Reach) is a high priority and is presently under implementation planning as a post-TMDL component of Idaho's TMDL process. In order for this high priority stream to meet its beneficial uses it is necessary for all tributaries (whether defined as §303(d) or not) that discharge into the high priority stream to undergo the TMDL process (as informational TMDLs) in order for the high priority stream (i.e. the Snake River) to meets its beneficial uses. In addition, certain high priority provisions apply and include the following once the TMDL is completed:

(1) Until a TMDL or equivalent process is completed for a high priority water quality limited water body, new or increased discharge of pollutants which have caused the water quality limited listing may be allowed if interim changes, such as pollutant trading, or some other approach for the pollutant(s) of concern are implemented and the total load remains constant or decreases within the watershed. In this situation, the Lake Walcott TMDL was completed in 2000 and approved by EPA (Lay 2000). The information contained in the Lake Walcott TMDL states that the two fish hatcheries on Fall Creek were not in operation at the time the TMDL was developed, finalized and approved (Lay 2000 [pp 32, 99]). Since then the development of EPA's Idaho General Aquaculture Permit has occurred and both of the Fall Creek facilities have determined to come back into operation; thus making it necessary to more formally develop the Fall Creek TMDL as a component of the Lake Walcott TMDL. As such, the TMDL process for the Snake River (as the water quality limited water body) in the Lake Walcott Subbasin is still in effect. Consequently, the Fall Creek TMDL is only an additional component of that same process that more fully addresses the sources of pollutants that eventually discharge (through Fall Creek) into the Snake River.

(2) Once the TMDL or equivalent process is completed (as has occurred with the Lake Walcott TMDL), any new or increased discharge of causative pollutants (as in the case of the two Fall Creek fish facilities) will be allowed only if consistent with the approved TMDL (i.e. the Lake Walcott TMDL). Therefore, the Fall Creek TMDL meets the overall intent of the Lake Walcott TMDL in defining consistency to pollutant sources in meeting the loading capacity of Fall Creek in order to meet the loading capacity of the Snake River as the high priority stream under the Lake Walcott TMDL.

(3) Nothing in the development and implementation of the Fall Creek TMDL (as a component of the Lake Walcott TMDL) is intended or shall be interpreted as requiring best management practices for agricultural operations which are not adopted on a voluntary basis.

III. DESCRIPTION OF THE APPLICABLE WATER QUALITY STANDARDS AND NUMERIC WATER QUALITY TARGET

The Massacre Rocks to Lake Walcott Reach of the Snake River is designated for primary contact recreation, secondary contact recreation, cold water aquatic life, drinking water supply, and agricultural water supply. See Lay 2000 (p 54). As previously noted in Section II, this is defined as Segment 2 of the Lake Walcott Snake River Reach in the Lake Walcott TMDL.

Table 1 shows the National Assessment Database (EPA 2002) for the Lake Walcott Watershed. It shows the assessment units (AUs) catalog number and water quality status of the Snake River reach for Segment 2 of Lake Walcott.

Table 1. Lake Walcott Segment 2 Reach Assessment Units and Water Quality Status

SEGMENT 2	SNAKE RIVER SEGMENT 2 ASSESSMENT UNIT(S)	WATER QUALITY STATUS PER AU
Massacre Rocks to Lake Walcott	American Falls Dam to Rock Creek (ID-17040209SK011_02,07,03)	I, I, NA
	Rock Creek to Raft River (ID-17040209SK006-07,02,03)	I, NA, NA
	Raft River to Lake Walcott (ID-17040209SK005_07)	I
	Minidoka Dam to Heyburn/Burley Bridge (ID-17040209SK002_07,02)	I, NA
	Heyburn/Burley Bridge to Milner Dam (ID-17040209SK002-07,03,02)	I, NA, NA
AU = Assessment Unit. ID = Idaho. I = Impaired. NA = Not Assessed.		

The numeric water quality standards imposed by the Lake Walcott TMDL are as follows:

1. Sediment. Water quality in this reach of the Snake River has been reported to have total suspended sediment (TSS) at 22.5 mg/L (mean); but has also been shown to have maximum concentrations of 230.0 mg/L TSS. See Lay 2000 (p 68, Table 13). The recommended instream water quality target for TSS is 25 mg/L (average monthly) in the Snake River and 50 mg/L (average monthly) in the tributaries (Lay 2000 [p 138]). The load capacity for sediment (as TSS) for the Snake River reach is 329 ton/day (Lay 2000 [p 146, Table 46]).

2. Nutrients. Water quality in this reach of the Snake River has been reported to have total phosphorus (TP) at 0.060 mg/L (mean); but has also been shown to have maximum concentrations of 0.111 mg/L TP (Lay 2000 [p 68, Table 13]). The recommended instream water quality target for TP is 0.080 mg/L TP in the Milner Pool (Lay 2000 [p 143]). No load capacity for TP is set in the Snake River reach.

3. Bacteria. Water quality in this reach of the Snake River has been reported to have fecal coliform bacteria at 81 cfu/100 mL (mean); but has also been shown to have maximum concentrations of 2,000 cful/100 mL (Lay 2000 [p 68, Table 13]). Bacteria as *Escherichia coli* (*E. coli*) were not assessed in the Lake Walcott TMDL because at the time the Idaho IDAPA rules and regulations had water quality standards only for fecal coliform as a surrogate for *E. coli*. Since then, the State Legislature has approved the *E. coli* water quality standard (IDAPA §58.01.02.251.01.a) for primary recreational standard as 126 cfu/100 mL geometric mean. It would appear from the values reported in the Lake Walcott TMDL that fecal coliform bacteria exceeded the numeric standards under certain conditions. From a conservative perspective, it is assumed that since fecal coliform bacterium was a surrogate for *E. coli*, the *E. coli* criteria was also exceeded under certain circumstances when the levels of fecal coliform were also exceeded. Therefore, the application of the

primary contact recreation geometric mean standard (126 cfu/100 mL) will be applied on Fall Creek to meet the beneficial uses of the Snake River.

IV. LOADING CAPACITY - LINKING WATER QUALITY AND POLLUTANT SOURCES

The loading capacity (LC) is the greatest amount of loading that a water body can receive without violating water quality standards. In the case of Fall Creek, the LC is dictated in great measure by the LC of the Snake River as the receiving §303(d) listed waterbody. In order for the Snake River to meet water quality standards, it is imperative that the tributaries to the Snake River meet water quality standards as well. Otherwise, attainment of water quality standards (and beneficial uses) cannot be achieved in the Snake River.

Based on the Lake Walcott TMDL provisions for instream water quality standards (or targets), the Fall Creek LC is defined as follows (as previously described in Section III):

1. Sediment (as TSS): 50 mg/L (average monthly) in the tributaries. Fall Creek average flow is approximately 25.0 cfs. Therefore,

   TSS LC = 50 mg/L TSS x 25.0 cfs x 5.4 = 6,750.0 lb/day TSS LC

2. Nutrients (as TP): The recommended instream water quality target for TP is 0.080 mg/L TP in the Milner Pool (Lay 2000 [p 143]). No load capacity for TP is set in the Snake River reach of the Lake Walcott TMDL. However, to meet the Milner Pool 0.080 mg/L TP target, the Snake River reach would need to be at least the same value. Therefore, a conservative approach would be to apply the same provision to tributary streams versus the Snake River; or 0.080 mg/L TP for the Snake River and 0.100 mg/L TP for tributaries. This same provision has precedence in the Mid-Snake Reach under the approved Upper Snake Rock TMDL (Buhidar 1999, Buhidar 2000, Buhidar 2005). Therefore,

   TP LC = 0.100 mg/L TP x 25.0 cfs x 5.4 = 13.50 lb/day TP LC

3. Bacteria (as *E. coli*): The primary recreational standard is 126 cfu/100 mL geometric mean based on a minimum of five (5) samples taken every three (3) to five (5) days over a thirty (30) day period. The "trigger" for this target will be an instantaneous value of 406 *E. coli* organisms/100 mL based on the primary contact recreational standard of the Snake River (IDAPA §58.01.02.251.01.b.i). Therefore,

   126 cfu/100 mL *E. coli* x 25.0 cfs x 0.02445 = 77.0 cfu^9/day *E. coli* LC

The current or existing load is calculated from the monitored pollutant concentrations in Fall Creek. For Fall Creek the existing load for TSS (32.0 mg/L) and TP (0.118 mg/L) is based on the Lake Walcott TMDL (Lay 2000 [p 65, Table 10]). *E. coli* information was not monitored and therefore is not available for determination of the existing water quality condition.

V. WASTELOAD ALLOCATIONS (WLAs)

The wasteload allocation (WLA) is the portion of a receiving water's LC that is allocated to one of its existing or future point sources of pollution. The WLA is the allocation for an individual

point source that ensures that the level of water quality to be achieved by the point source is derived from and complies with all applicable water quality standards. Fall Creek is not currently on the §303(d) list of the federal Clean Water Act. The application of the water quality standards is based on achieving the beneficial uses of the Snake River (which is §303(d) listed). Therefore, Fall Creek must meet the water quality standard of the Snake River by having its own LC for that express purpose.

Only two (2) point sources are known to exist on Fall Creek. They are: (1) Fall Creek Upper Facility (NPDES No. ID-0026719) and (2) Fall Creek Lower Facility (NPDES No. ID-0026816). The WLAs for both these facilities are based on the discharge monitoring records for the period of record from January 1996 to November 1998 (or N = 35) for both facilities. Both facilities were not operated (until recently) since 1998, and are presently seeking WLAs for their NPDES permits.

1. TSS WLA: The TSS limitation for raceway effluent discharges is 5.0 mg/L Net TSS. This limitation has foundation and precedence as an NPDES permit limit in the Mid-Snake fish hatcheries of the Upper Snake Rock TMDL (Buhidar, 1997, Buhidar 1999, Buhidar 2000, and Buhidar 2005). IDEQ-TFRO concludes that the application of this limitation on the Fall Creek facilities is consistent and provides a rational basis for use of this provision. Therefore,

   Upper Facility: 5.0 mg/L TSS x 21.4 cfs (mean) x 5.4 = 577.8 lb/day TSS
   Lower Facility: 5.0 mg/L TSS x 24.9 cfs (mean) x 5.4 = 672.3 lb/day TSS
   Overall TSS Total WLA: 577.8 lb/day + 672.3 lb/day = 1,250.1 lb/day TSS

   Based on the discharge monitoring reports for the period of record for the Upper Facility, the raceway average TSS net load as never exceeded. The average TSS out load for the offline settling pond exceeded the TSS WLA one (1) time in 35 sampling months or 2.86% of the time. Relative to the Lower Facility, the average TSS net load never exceeded the TSS WLA.

2. TP WLA: The basis for the TP WLA is premised on a concentration target that will meet the water quality standard for the Snake River (as the receiving waterbody) in the Lake Walcott Subbasin. As discussed in Section IV, in order to follow precedence and maintain consistency and to provide a rational basis for such precedence and consistency, the use of the Upper Snake Rock TMDL approach (not the 0.075 mg/L TP instream target in the Middle Snake River) for aquaculture facilities was applied here (Buhidar, 1997, Buhidar 1999, Buhidar 2000, and Buhidar 2005) but rather as defined in the Lake Walcott TMDL for the Snake River. Therefore, a concentration-based target of 0.080 mg/L TP (as defined in the Lake Walcott TMDL) was used to set the TP limitations for both facilities together; based on the 0.080 mg/L TP in the Snake River as previously discussed in Section IV; and based on a flow rate of 24.9 cfs since this represents the greater average flow rate of both facilities. Therefore,

   TP WLA (Both Facilities): 0.080 mg/L TP x 24.9 cfs x 5.4 = 10.76 lb/day TP

   In order to segregate out the WLA for both facilities, a production-based approach was applied based on discussions with facility personnel on March

10, 2006. The following was the basis for the segregation of the 10.76 lb/day TP:

Upper Facility: 500,000 lb annual production = 62.50%
Lower Facility: 300,000 lb annual production = 37.50%
Overall: 800,000 lb annual production = 100.00%

Upper Facility: 10.76 lb/day TP x 62.50% = 6.73 lb/day TP
Lower Facility: 10.76 lb/day TP x 37.50% = 4.03 lb/day TP
Overall: 6.73 lb/day + 4.03 lb/day = 10.76 lb/day TP

Together, both facilities shall receive a TP limitation of 10.76 lb/day TP in order to meet the beneficial uses of Fall Creek (as an informational TMDL as described in Section II) so that the beneficial uses of the Snake River are achieved under the Lake Walcott TMDL. This means that the offline settling ponds associated with the Upper Facility (as part of the WLA for the facility) must also meet the WLA specific for the Upper Facility (6.73 lb/day TP). The Lower Facility must meet the 4.03 lb/day TP WLA. Together, both facilities shall not exceed 10.76 lb/day TP WLA.

Unfortunately, no information was available form the discharge monitoring reports for the TP load for the period of record in order to assess the necessary reduction percentages that would be needed to meet the beneficial uses of the Snake River.

3. *E. coli* WLA: As stipulated in Buhidar and Sharpnack (2003): "Relative to the aquaculture industry in the Upper Snake Rock subbasin, the fecal coliform or *E. coli* criteria are not indigenous to cold water fish hatcheries or warm water fish hatcheries. Total coliform bacteria are a collection of relatively harmless microorganisms that live in man and warm- and cold-blooded animals. They aid in the digestion of food. A specific subgroup of this collection is the fecal coliform bacteria, the most common member being *E. coli*. Fecal coliform bacteria and *E. coli* are generated in the intestines of man or warm-blooded animals. Fish, whether raised in cold water or warm water, are cold-blooded animals and do not generate fecal coliform bacteria or *E. coli* in their intestines." Consequently, no limitations are imposed for *E. coli* on the fish hatcheries of Fall Creel. In addition, no information was available form the discharge monitoring reports for the *E. coli* load for the period of record. Therefore, the WLA for *E. coli* is zero.

VI. LOAD ALLOCATIONS (LAs)

The load allocation (LA) is the portion of a receiving water's LC that is attributed either to one (1) of its existing or future nonpoint sources of pollution or to natural background sources.

In order to mathematically define the LA for Fall Creek, the starting point is with the LC. The LC, as previously described (Section IV) is the greatest amount of loading that water can receive without violating water quality standards. By mathematical definition, the components that make up the LC cannot be greater than the LC itself. Consequently, the LA for nonpoint sources combined with the WLA for point sources must be less than the LC. To these components must be added the definition of "available load" (AL) which represents the load that is actually available for allocation between point sources and nonpoint sources after the

uncertainty component is considered. That uncertainty component is best defined as the margin of safety (MOS) which is further described in Section VII. But essentially, the available load is the LC minus the MOS. Therefore,

AL = LA + WLA = LC - MOS

LA = LC - MOS - WLA = LC - (MOS + WLA)

TSS LA: 6,750.0 lb/day TSS - (675.0 lb/day + 1,250.1 lb/day) = 4,824.9 lb/day TSS

TP LA: 13.50 lb/day TP - (1.35 lb/day + 10.76 lb/day) = 1.39 lb/day TP

E. coli LA: 77.0 cfu^9/day *E. coli* - (7.7 cfu^9/day + 0.0 cfu^9/day) = 69.3 cfu^9/day *E.coli*

Within the structure of the Fall Creek TMDL, the LA was further divided into the following three (3) general categories: (1) permitted nonpoint source facilities; (2) Ag, Graze, Private, Corridor; and (3) stormwater construction-type facilities.

1. The first general category deals with permitted nonpoint source facilities associated with the Federal Energy Regulatory Commission (FERC) permitted hydropower facilities; all land application facilities (LAFs) that may or may not require a permit from the State; and all confined feeding operations (CFOs) that may or may not require an NPDES permit from EPA for a 24-hour, 25 year storm event.

2. The second general category deals with all agricultural lands (inclusive of irrigated and non irrigated lands farmlands); grazing on public lands and state lands; private land ownership that includes all nonpoint source activities; and those activities of sort that are more closely related to the Fall Creek stream corridor that are not necessarily associated with the other sub components of this second general category.

3. The third general category deals with all construction-type activities that may or may require a general permit (from EPA) that may have a direct impact to Fall Creek and which require erosion and sediment controls. This third category utilizes a 2% reserve from the overall nonpoint source category and reverts back to this category once the construction activity is finalized. Precedence and justification for this 2% approach may be shown in Buhidar (2005). Calculations for this category are summarized as follows:

   Construction Activities = Pollutant LA x 2%

   TSS Construction Activities: 4,824.9 lb/day x 2% = 96.5 lb/day TSS

   TP Construction Activities: 1.39 lb/day x 2% = 0.03 lb/day TP

   E. coli Construction Activities: 69.3 cfu^9/day x 2% = 1.4 cfu^9/day *E. coli*

In terms of future growth for nonpoint sources, no specific allocation was set aside for this, therefore the allocation is zero. However, as a general consideration, it is noted that future growth of the Fall Creek drainage that incorporate a landuse change (such as from agricultural or grazing lands to subdivisions) may occur. Such changes or any similar to it will still be

considered a part of the overall nonpoint source category that is associated with the LA and must demonstrate compliance with the overall water quality goals of the Fall Creek TMDL in order to be in compliance with the TMDL process.

VII. MARGIN OF SAFETY (MOS)

A 10% margin of safety (MOS) was applied on all pollutants-of-concern to account for any lack of knowledge concerning the relationship between effluent limitations and water quality. As such:

1. TSS MOS: 10% of the LC. Therefore,

   6,750 lb/day TSS LC x 10% = 675.0 lb/day TSS MOS

2. TP MOS: 10% of the LC. Therefore,

   13.50 lb/day TP LC x 10% = 1.35 lb/day TP MOS

3. *E. coli* MOS: 10% of the LC. Therefore,

   77.0 cfu^9/day *E. coli* LC x 10% = 7.7 cfu^9/day *E. coli* MOS

VIII. SEASONAL VARIATION

Seasonal variation is a component of a TMDL. The application of a seasonal component into the TMDL for Fall Creek was not considered because little information existed to allow for this. Therefore, the seasonal variation is zero. However, it is reasonable to assume that future iterations of the Fall Creek TMDL may require seasonal considerations and are therefore deferred until such time as more information is provided to justify this.

IX. OVERALL TMDL TABLE BASED ON THE LC FOR FALL CREEK

Table 2 summarizes Sections IV, V, VI, VII and VIII as previously noted. The overall TMDL table (Table 2) is based on the water quality targets set for Fall Creek on instream water quality targets for TSS (50.0 mg/L), TP (0.100 mg/L) and E. coli (126 cfu/100 mL geometric mean). The flow provisions are based on average flows of 25.0 cfs for Fall Creek, 21.4 cfs for the Upper Facility and 24.9 cfs for the Lower Facility.

Table 2. Fall Creek Overall TMDL Table

TMDL COMPONENTS	TSS, lb/day	TP, lb/day	*E. coli*, cfu^9/day
NONPOINT SOURCES			
FERC, LAFs, CFOs	0.0	0.0	0.0
Ag, Graze, Private, Corridor	4,728.4	1.36	67.9
Stormwater - Construction - 2%	96.5	0.03	1.4
NPDES PERMITTED POINT SOURCES			
Upper Facility WLA	577.8	6.73	0.0
Lower Facility WLA	672.3	4.03	0.0
Margin of Safety - 10%	675.0	1.35	7.7
Loading Capacity	6,750.0	13.50	77.0

E. coli = *Escherichia coli*. TSS = Total Suspended Solids. TP = Total Phosphorus. WLA = Wasteload Allocation for an NPDES permitted point source facility. Seasonal variation is not a component in the Fall Creek TMDL at this time. FERC = Federal Energy

Regulatory Commission permitted hydropower facilities. LAFs = Land Application Facilities. CFOs = Confined Feeding Operations like dairies and feedlots of all sizes. Seasonality is not a component that was considered in Table 2 as described in §VIII.

Relative to TSS, the overall nonpoint source category (4,824.9 lb/day TSS) represents 71.48% of the TSS LC. The point source category (1,250.1 lb/day TSS) represents 18.52% of the TSS LC. The remaining 10% is attributable to the TSS MOS.

Relative to TP, the overall nonpoint source category (1.39 lb/day TP) represents 10.30% of the TP LC. The point source category (10.76 lb/day TP) represents 79.70% of the TP LC. The remaining 10% is attributable to the TP MOS.

Relative to *E. coli*, the overall nonpoint source category (69.3 cfu^9/day *E. coli*) represents 90.0% of the *E. coli* LC. The point source category (0.0 cfu^9/day *E. coli*) represents 0.0% of the *E. coli* LC. The remaining 10% is attributable to the *E. coli* MOS.

X. REASONABLE ASSURANCES

Providing reasonable assurance that point sources and nonpoint sources will meet the LC of Fall Creek is a necessary requirement of the Fall Creek TMDL in order to meet the beneficial uses of the Snake River. By determining the LC for Fall Creek (for TSS, TP and *E. coli*) and by allocating allowable limits within the confines of the LC provides reasonable assurance that the LC can be met by both the point sources and the nonpoint sources (assuming both sources meet their imposed targets). Therefore, reasonable assurance will be provided through the following:

1. Point Sources. Point sources (fish hatcheries) will receive WLAs that are described in Table 2, which are within the LC of the Fall Creek waterbody; and are specifically set up to meet the beneficial uses of the Snake River. Therefore, IDEQ-TFRO in conjunction with EPA will coordinate with the permitted facilities to incorporate the WLAs through the NPDES permitting process since TP makes up 79.70% of the TP LC in the point source category (as shown in Section IX, Table 2).

2. Nonpoint Sources. Nonpoint sources will receive LAs that are below and within the LC of the Fall Creek waterbody; and are specifically set up to meet the beneficial uses of the Snake River. Therefore, IDEQ-TFRO in conjunction with the land management agencies will coordinate with public and private land ownerships to incorporate water quality cleanup strategies and projects specifically targeted to reducing erosion and sediment sources since TSS makes up 71.48% of the TSS LC in the nonpoint source category (as shown in Section IX, Table 2). Associated with TSS is 90.0% of the *E. coli* that is attributable to the nonpoint source category.

In the case of Fall Creek, both the point source and nonpoint source industries will provide management strategies that support reasonable assurances in meeting the water quality standards and beneficial uses of Fall Creek and the Snake River jointly.

XI. MONITORING PLAN TO TRACK TMDL EFFECTIVENESS

In addition to monitoring that will be conducted by the NPDES permitted facilities, IDEQ-TFRO will monitor (depending on available resources) Fall Creek, especially as it pertains to any water quality cleanup projects (as referenced in Section XII). Monitoring will include the

flowing: (1) headwaters reach, (2) immediately above the Upper Facility, (3) between the Upper and Lower Facilities, (4) immediately below the Lower Facility, and (5) just above the point of discharge into the Snake River. The importance of this level of monitoring is to ascertain the load characteristics of Fall Creek within the drainage and how nonpoint source and point source impacts are affecting the water quality of Fall Creek.

In addition, the Beneficial Use Reconnaissance Program (BURP) will be utilized to ascertain the status of beneficial uses on Fall Creek as defined by the protocols of BURP.

Other monitoring will be assessed that involves private landowners, public land management agencies, and the Idaho Soil Conservation Commission and the associated Soil and/or Water Conservation District. Erosion assessments for nonpoint source considerations will also be determined as monitoring is further developed over the next 5 years.

XII. IMPLEMENTATION PLANNING

As part of the overall Lake Walcott TMDL implementation planning process, the Fall Creek TMDL is a part of that process. IDEQ-TFRO is presently in the process of assessing potential water quality cleanup projects on Fall Creek with the assistance of the Lake Walcott Watershed Advisory Group and the associated land management agencies.

XIII. PUBLIC PARTICIPATION

Prior to finalization of the draft Fall Creek TMDL, IDEQ-TFRO visited the Fall Creek watershed and the NPDES permitted facilities to gather the necessary information for establishing the TMDL. IDEQ-TFRO will public notice and conduct a public review process (i.e. 30 days) to receive comments from the Lake Walcott subbasin interests; as well as from the Fall Creek watershed interests.

XIV. REFERENCES

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Appendix A. Fall Creek Drainage and Fish Hatchery